CLAIMS

1. A wafer polishing method using a polishing apparatus which comprises a rotatable table having a polishing cloth adhered thereon and a polishing head equipped with a wafer holding plate opposing to the table and in which the back surface of the wafer is held by a holding surface of the wafer holding plate and the front surface of the wafer is pressed to and polished by the polishing pad, comprising a polishing step of polishing the front surface of the wafer to a predetermined total polishing stock removal without changing the polishing apparatus, wherein the polishing step is divided into plural sub-steps and a holding position of the wafer in a subsequent sub-step is different from a holding position of the wafer in a previous sub-step.

2. The wafer polishing method according to claim 1, wherein the change of the wafer holding position is performed by rotating a holding position of the wafer about the center thereof as the center of rotation by a predetermined rotational angle and the predetermined rotational angle is set to an angle obtained by dividing outer peripheral waviness of the wafer by the number (n) of the sub-steps.

3. The wafer polishing method according to claim 1, wherein the change of a wafer holding position is performed by rotating a holding position of the wafer about the center thereof as the center of rotation by a predetermined rotational angle and the predetermined rotational angle is set to 1/2 of outer peripheral waviness of the wafer.

4. The wafer polishing method according to any of claims 1 to 3,

wherein a polishing stock removal in each sub-step is set to a value obtained by dividing the total polishing stock removal by the number (n) of the sub-steps.

5. The wafer polishing method according to any of claims 1 to 4, wherein the wafer is an SOI wafer.

6. A polishing apparatus usable in the wafer polishing method according to any of claims 1 to 5, comprising a rotatable table having a polishing cloth adhered thereon and a polishing head equipped with a wafer holding plate opposing to the table, wherein the back surface of the wafer is held by a holding surface of the wafer holding plate and the front surface of the wafer is pressed to and polished by the polishing pad, and wherein a mark serving as a guide is formed at a predetermined position of the polishing head.

7. The polishing apparatus according to claim 6, further comprising a wafer changing unit equipped with a changing stage holding the wafer detachably, wherein when changing the plural sub-steps in the wafer polishing method according to any of claims 1 to 5, the wafer held on a holding surface of the wafer holding plate is delivered to the changing stage, a relative position of the changing stage holding the wafer to the wafer holding plate is rotated by a predetermined angle, and thereafter the wafer is restored to the wafer holding plate from the changing stage and is again held thereon for another polishing.

8. The polishing apparatus according to claim 7, wherein the wafer changing unit comprises a rotatable changing stage which holds a wafer detachably, a changing stage rotating mechanism which rotates the

changing stage, and a polishing head moving mechanism which makes the polishing head move between the table and the wafer changing unit.